

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A catalyst comprising:
- At at least one hydro-dehydrogenating element ~~selected from the group consisting of elements of which is an element of~~ group VIB and or of group VIII of the periodic table,
  - a non-zeolitic silica-alumina-based substrate containing an amount of more than 10% by weight and less than or equal to 80% by weight of silica (SiO<sub>2</sub>),
  - a mean pore diameter ~~a total pore volume~~, measured by mercury porosimetry, ~~encompassed~~ between 20 and 140 Å,
  - a total pore volume, measured by mercury porosimetry, ~~encompassed~~ between 0.1 ml/g and 0.6 ml/g,
  - a total pore volume, measured by nitrogen porosimetry, ~~encompassed~~ between 0.1 ml/g and 0.6 ml/g,
  - a BET specific surface area ~~encompassed~~ between 150 and 500 m<sup>2</sup>/g,
  - a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 140 Å, of less than 0.1 ml/g,
  - a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 160 Å, of less than 0.1 ml/g,
  - a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 200 Å, of less than 0.1 ml/g,
  - a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 500 Å, of less than 0.1 ml/g,

- a pore distribution such that the ratio between volume V2, measured by mercury porosimetry, ~~encompassed~~ between  $D_{\text{mean}} - 30 \text{ \AA}$  and  $D_{\text{mean}} + 30 \text{ \AA}$  to the total mercury volume is more than 0.6 - volume V3, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than  $D_{\text{mean}} + 30 \text{ \AA}$  is less than 0.1 ml/g - volume V6, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than  $D_{\text{mean}} + 15 \text{ \AA}$  is less than 0.2 ml/g,
- an X ray diffraction diagram that contains at least the main lines that are characteristic of at least one of a transition alumina, which is an ~~the transition aluminas encompassed in the group that consists of the~~ alpha, rho, chi, eta, gamma, kappa, theta or ~~and~~ delta alumina aluminas.

2. (Previously Presented) A catalyst according to claim 1, having a proportion of octahedral  $\text{Al}_{\text{VI}}$  determined by the analysis of the NMR MAS spectra of the solid of  $^{27}\text{Al}$  of more than 50%.

3. (Previously Presented) A catalyst according to claim 1 comprising nickel and tungsten.

4. (Previously Presented) A catalyst according to claim 1 comprising platinum and palladium.

5. (Currently Amended) A catalyst according to claim 1 further comprising at least one dopant which is selected from the group consisting of phosphorus, boron, and and/or

silicon and which is deposited on the catalyst.

6. (Currently Amended) A catalyst according to claim 1 further comprising at least one element of group VIIB.

7. (Currently Amended) A catalyst according to claim 1 further comprising at least one element of group VB.

8. (Previously Presented) A catalyst according to claim 1 having a packing density of more than  $0.85 \text{ g/cm}^3$ .

9. (Currently Amended) A non-zeolitic silica-alumina-based substrate containing more than 10% by weight and less than or equal to 80% by weight of silica ( $\text{SiO}_2$ ), comprising characterized by:

- a mean pore diameter, measured by mercury porosimetry, ~~encompassed~~ between 20 and 140 Å,
- a total pore volume, measured by mercury porosimetry, ~~encompassed~~ between 0.1 ml/g and 0.6 ml/g,
- a total pore volume, measured by nitrogen porosimetry, ~~encompassed~~ between 0.1 ml/g and 0.6 ml/g,
- a BET specific surface area ~~encompassed~~ between 150 and 500  $\text{m}^2/\text{g}$ ,
- a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 140 Å, of less than 0.1 ml/g,

- a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 160 Å, of less than 0.1 ml/g,
- a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 200 Å, of less than 0.1 ml/g,
- a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 500 Å, of less than 0.01 ml/g,
- a pore distribution such that the ratio between volume V2, measured by mercury porosimetry, ~~encompassed~~ between  $D_{\text{mean}} - 30 \text{ Å}$  and  $D_{\text{mean}} + 30 \text{ Å}$  to the total mercury volume is more than 0.6 - volume V3, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than  $D_{\text{mean}} + 30 \text{ Å}$  is less than 0.1 ml/g - volume V6, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than  $D_{\text{mean}} + 15 \text{ Å}$  is less than 0.2 ml/g,
- an X ray diffraction diagram that contains at least the main lines that are characteristic of at least one of a transition alumina, which is an ~~the transition aluminas encompassed in the group that consists of the~~ alpha, rho, chi, eta, gamma, kappa, theta or and delta alumina aluminas.

10. (Previously Presented) A substrate according to claim 9, having a cationic impurity content of less than 0.1% by weight.

11. (Previously Presented) A substrate according to claim 9, having an anionic impurity content of less than 0.5% by weight.

12. (Currently Amended) A substrate according to claim 9, exhibiting an X ray diffraction diagram containing at least the main lines that are characteristic of at least one of a transition alumina, which is an ~~the transition aluminas encompassed in the group that consists of~~ eta, theta, delta or ~~and~~ gamma alumina ~~aluminas~~.

13. (Currently Amended) A substrate according to claim 9, exhibiting an X ray diffraction diagram containing at least the main lines that are characteristic of at least one of a transition alumina, which is an ~~the transition aluminas contained in the group that consists of~~ eta- or ~~and~~ gamma- alumina ~~aluminas~~.

14. (Previously Presented) A substrate according to claim 9, having a mean pore diameter encompassed between 40 and 120 Å.

15. (Previously Presented) A substrate according to claim 9 comprising at least two silico-aluminum zones having Si/Al ratios that are less than or greater than the overall Si/Al ratio, as determined by X fluorescence.

16. (Previously Presented) A substrate according to claim 9 comprising a single silico-aluminum zone having an Si/Al ratio that is equal to the overall Si/Al ratio, as determined by X fluorescence, and is less than 2.3.

17. (Previously Presented) A substrate according to claim 9, having a packing density, after calcination, of more than 0.65 g/cm<sup>3</sup>.

18. (Currently Amended) A substrate according to claim 9 having an acidity that is measured by IR tracking of the thermodesorption of pyridine is such that the B/L ratio is ~~ene~~compassed between 0.05 and 1.

19. (Withdrawn and Currently Amended) A process for hydrocracking and/or hydroconversion of a hydrocarbon-containing ~~feedstock~~ feedstocks comprising providing a the catalyst according to claim 1 or the catalyst that contains the non-zeolitic silica-alumina-based substrate that contains an amount that is more than 10% by weight and less than or equal to 80% by weight of silica (SiO<sub>2</sub>), ~~comprising~~ characterized by:

- a mean pore diameter, measured by mercury porosimetry, ~~ene~~compassed between 20 and 140 Å,
- a total pore volume, measured by mercury porosimetry, ~~ene~~compassed between 0.1 ml/g and 0.6 ml/g,
- a total pore volume, measured by nitrogen porosimetry, ~~ene~~compassed between 0.1 ml/g and 0.6 ml/g,
- a BET specific surface area ~~ene~~compassed between 150 and 500 m<sup>2</sup>/g,
- a pore volume, measured by mercury porosimetry, ~~ene~~compassed in the pores with diameters of more than 140 Å, of less than 0.1 ml/g,
- a pore volume, measured by mercury porosimetry, ~~ene~~compassed in the pores with diameters of more than 160 Å, of less than 0.1 ml/g,
- a pore volume, measured by mercury porosimetry, ~~ene~~compassed in the pores with diameters of more than 200 Å, of less than 0.1 ml/g,

- a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 500 Å, of less than 0.01 ml/g,
- a pore distribution such that the ratio between volume V2, measured by mercury porosimetry, ~~encompassed~~ between  $D_{\text{mean}} - 30 \text{ Å}$  and  $D_{\text{mean}} + 30 \text{ Å}$  to the total mercury volume is more than 0.6 - volume V3, measured by mercury porosimetry ~~encompassed~~ in the pores with diameters of more than  $D_{\text{mean}} + 30 \text{ Å}$  is less than 0 ml/g - volume V6, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than  $D_{\text{mean}} + 15 \text{ Å}$  is less than 0.2 ml/g,
- an X ray diffraction diagram that contains at least the main lines that are characteristic of at least one of a transition alumina, which is an ~~the transition aluminas encompassed in the group that consists of the~~ alpha, rho, chi, eta, gamma, kappa, theta or ~~and~~ delta alumina ~~aluminas~~.

20. (Withdrawn) A process for hydrocracking and/or hydroconversion according to claim 19 that is carried out according to a single-stage process.

21. (Withdrawn and Currently Amended) A process for hydrocracking and/or hydroconversion according to claim 20 that comprises:

- ~~A~~ a first hydrorefining reaction zone in which the feedstock is brought into contact with at least one hydrorefining catalyst that exhibits in ~~a~~ the standard activity test a methylcyclohexane conversion level that is less than 10% by mass,
- ~~A~~ a second hydrocracking reaction zone in which at least a portion of the effluent that is obtained from the hydrorefining stage is brought into contact with at least one non-

- zeolitic hydrocracking catalyst that exhibits in ~~a~~ the standard activity test a methylcyclohexane conversion level that is more than 10% by mass,
- and in which the proportion of the catalytic volume of the hydrorefining catalyst represents 20 to 45% of the total catalytic volume.

22. (Withdrawn) A process for hydrocracking and/or hydroconversion according to claim 19 that comprises at least a first hydrorefining reaction zone and at least a second reaction zone that comprises a hydrocracking of at least a portion of the effluent of the first zone and that comprises an incomplete separation of ammonia from the effluent that exits from the first zone.

23. (Withdrawn) A process for hydrocracking and/or hydroconversion according to claim 19 in a two-stage process.

24. (Withdrawn and Currently Amended) A process according to claim 19 that operates, in the presence of hydrogen, at a temperature of more than 200°C, under a pressure of more than 1 MPa, wherein ~~whereby~~ the volumetric flow rate is ~~encompassed~~ between 0.1 and 20 h<sup>-1</sup>, and the amount of hydrogen that is introduced is such that the volumetric ratio of liter of hydrogen/liter of hydrocarbon is ~~encompassed~~ between 80 and 5000 l/l.

25. (Withdrawn and Currently Amended) A process for hydrocracking and/or hydroconversion according to claim 19 that operates at a pressure ~~encompassed~~ between 20 and 60 bar and that results in conversions of less than 40%.



26. (Withdrawn) A process according to claim 19 that operates in a fixed bed.
27. (Withdrawn) A process according to claim 19 that operates in a boiling bed.
28. (Withdrawn) A process according to claim 23, in which the catalyst comprises at least one of the noble elements of group VIII.
29. (Withdrawn) A process according to claim 28, in which the catalyst comprises platinum and/or palladium.
30. (Withdrawn and Currently Amended) A process for hydrotreatment of a hydrocarbon-containing ~~feedstock~~ ~~feedstocks~~ comprising providing ~~a~~ the catalyst according to claim 1 or ~~a~~ the catalyst that contains the non-zeolitic silica-alumina- based substrate that contains an amount that is more than 10% by weight and less than or equal to 80% by weight of silica ( $\text{SiO}_2$ ), ~~comprising~~ ~~characterized by:~~
- a mean pore diameter, measured by mercury porosimetry, ~~encompassed~~ between 20 and 140 Å,
  - a total pore volume, measured by mercury porosimetry, ~~encompassed~~ between 0.1 ml/g and 0.6 ml/g,
  - a total pore volume, measured by nitrogen porosimetry, ~~encompassed~~ between 0.1 ml/g and 0.6 ml/g,
  - a BET specific surface area ~~encompassed~~ between 150 and 500  $\text{m}^2/\text{g}$ ,
  - a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with

- diameters of more than 140 Å, of less than 0.1 ml/g,
- a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 160 Å, of less than 0.1 ml/g,
  - a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 200 Å, of less than 0.1 ml/g,
  - a pore volume, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than 500 Å, of less than 0.01 ml/g,
  - a pore distribution such that the ratio between volume V2, measured by mercury porosimetry, ~~encompassed~~ between  $D_{\text{mean}} - 30 \text{ Å}$  and  $D_{\text{mean}} + 30 \text{ Å}$  to the total mercury volume is more than 0.6 - volume V3, measured by mercury porosimetry ~~encompassed~~ in the pores with diameters of more than  $D_{\text{mean}} + 30 \text{ Å}$  is less than 0 ml/g - volume V6, measured by mercury porosimetry, ~~encompassed~~ in the pores with diameters of more than  $D_{\text{mean}} + 15 \text{ Å}$  is less than 0.2 ml/g,
  - an X ray diffraction diagram that contains at least the main lines that are characteristic of at least one of a transition alumina, which is an ~~the transition aluminas encompassed in the group that consists of the~~ alpha, rho, chi, eta, gamma, kappa, theta or ~~and~~ delta alumina aluminas.

31. (Withdrawn) A process according to claim 30 that is placed upstream from a hydrocracking process.

32. (Withdrawn) A process according to claim 31, where the hydrocracking catalyst is based on zeolite.

33. (Withdrawn) A process according to claim 31, where the hydrocracking catalyst is based on silica-alumina.

34. (Withdrawn) A process according to claim 19, in which the hydrocracking catalyst is based on nickel and tungsten.

35. (Withdrawn and Currently Amended) A process according to claim 19, in which the hydrocarbon-containing feedstock is ~~feedstocks are selected from the group consisting of LCO (light cycle oil), an atmospheric distillate distillates, distillate distillates, whereby the feedstocks are wherein the feedstock is~~ obtained from a unit ~~units~~ for extracting aromatic compounds from lubricating oil bases or obtained from a solvent dewaxing of lubricating oil base bases, ~~whereby the distillates are~~ wherein the distillate is obtained by a processes for desulfurization or hydroconversion in a fixed bed or in a boiling bed of a RAT (atmospheric residue residues) and/or RSV (vacuum residue residues) and/or a desasphalted oil oils, the desasphalted oil by itself oils, ~~by themselves~~ or in a mixture.

36. (New) A catalyst according to claim 1, wherein the pore volume, measured by mercury porosimetry, in the pores with diameters of more than 500 Å is 0.01 ml/g.

37. (New) A catalyst according to claim 1, wherein the pore volume, measured by mercury porosimetry, in the pores with diameters of more than 500 Å is 0.001 ml/g.